

Global Learning Semesters

Course Syllabus

Course: COMP-350 Systems Software Programming

Department: Computer Science

Host Institution: University of Nicosia, Nicosia, Cyprus



Course Summary		
Course Code	Course Title	Recommended Credit Hours
COMP-350	Systems Software Programming	3
Semester Offered	Contact Hours	Prerequisites
As needed	42	COMP-255 C++ Language Programming: Good programming skills, understanding of functions, scope, parameter passing, file access, user-defined data types, etc.
Department	Level of Course	Language of Instruction
Computer Science	Upper Division	English

Course Description

Introduction to system components. Evolution of the components of a programming system and of operating systems; application program interfaces and system calls. Process creation and termination, process hierarchies, thread realisation and programming. Inter-process communication, message passing, process and thread synchronisation. Semaphores, mutual exclusion, condition variables and locks. Shared memory concepts and programming. Remote procedure calls. TCP/IP network programming, sockets, ports and packets, socket manipulation. Client-server programming. Introduction to distributed systems.

Instructor

Dr Socrates Mylonas

Course Aims and Objectives

To introduce students to the considerations and implementation of systems software and components, such as servers and other multithreaded applications, inter-process communication, virtual and shared memory allocation and distributed systems.

Teaching Methods

The course is delivered through a mixture of lectures, lab presentations and tutorials and practical exercises and assignments.

Course Teaching Hours

42 hours of lectures with additional lab hours arranged for practical work and presentations. The course may be scheduled for either the Fall or the Spring semester in 14 weeks (3 hours/week).

Evaluation and Grading

Assignments: 20%
Mid-Term: 30%
Final Exam: 50%

Readings and Resources

Required Textbook

David A. Curry, UNIX Systems programming for SVR4, O'Reilly, 1996.

Recommended Reading

A. Silberschatz, P. B. Galvin, Operating System Concepts, 5th Ed., Addison-Wesley, 1999.

W. Richard Stevens, UNIX Network programming, 2nd Ed. Vol. 1, Prentice Hall 1998.

W. Richard Stevens, UNIX Network programming, 2nd Ed., Vol. 2, Prentice Hall, 1999.

Andrew S. Tanenbaum, Modern Operating Systems, Prentice Hall, 2001.

Andrew S. Tanenbaum, Maarten Van Steen, Distributed Systems, Prentice Hall, 2001.